

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently amended) A method for enabling communication between a first processor and a second processor using at least one additional processor separate from the first processor and the second processor, wherein one or more firewalls selectively restrict the communication, the method comprising ~~the steps of:~~

determining, at the first processor, that a hairpin between the first and second processors is required for communicating with the second processor;

determining, at the at least one additional processor, whether the first and second processors mutually consent to enabling a the hairpin between the first and second processors;

providing, by the at least one additional processor, to the first processor a first information identifying the hairpin and to the second processor a second information identifying the hairpin, when the at least one additional processor determines that the first and second processors mutually consent to the hairpin;

establishing a first information flow from the first processor to the hairpin based on the provided first information;

establishing a second information flow from the second processor to the hairpin based on the provided second information; and

forwarding, at the hairpin, the first information flow received from the first processor to the second processor such that the communication between the first and second processors is allowed by the one or more firewalls.

2. (Currently amended) The method of claim 1, wherein said ~~step of~~ providing a first information further comprises ~~the step of~~:

providing an IP address and a first port number at the hairpin.

3. (Currently amended) The method of claim 1, wherein said ~~step of~~ establishing a first information flow further comprises ~~the step of~~:

establishing a first flow of packets from the first processor to a first port at the hairpin based on the provided first information.

4. (Currently amended) The method of claim 3, wherein said ~~step of~~ establishing a first flow of packets further comprises ~~the step of~~:

defining the first port as a TCP port at the hairpin.

5. (Currently amended) The method of claim 1, wherein said ~~step of~~ establishing a second information flow further comprises ~~the step of~~:

establishing a second flow of packets from the second processor to a second port at the hairpin based on the provided second information.

6. (Currently amended) The method of claim 1, wherein said ~~step of~~ forwarding at the hairpin further comprises ~~the step of~~:

forwarding the second information flow from second processor to the first processor such that the communication between the first and second processors is allowed by the one or more firewalls.

7. (Currently amended) A method for enabling communication between a first processor and a second processor using at least one additional processor separate from the first and second processors, wherein one or more firewalls selectively restrict the communication between the first and second processors, said method comprising ~~the steps of~~:

receiving, at the at least one additional processor, a first request from the first processor for a hairpin, when the first processor determines that the one or more firewalls restrict the communication between the first and second processors;

receiving, at the at least one additional processor, a second request from the second processor for the hairpin, when the second processor determines that the one or more firewalls restrict the communication between the first and second processors;

authorizing, at the at least one additional processor, a first port at the hairpin and a second port at the hairpin, when each of the first and second processors consents to enabling the hairpin;

allocating the first port for the first processor and the second port for the second processor; and

forwarding, at the hairpin, one or more packets received at the first port from the first processor to the second port such that the communication between the first and second processors is allowed by one or more firewalls.

8. (Currently amended) The method of claim 7, wherein said ~~step of~~ forwarding further comprises ~~the step of~~:

forwarding the one or more packets received at the first port without decoding one or more payloads included within the one or more packets.

9. (Currently amended) The method of claim 7, further comprising ~~the step of~~: authorizing, at the at least one additional processor, the first processor to serve as the hairpin.

10. (Currently amended) The method of claim 7, further comprising ~~the step of~~: authorizing the at least one additional processor to serve as the hairpin.

11. (Currently amended) The method of claim 7, further comprising ~~the step of~~: authorizing, at the at least one additional processor, a processor to serve as the hairpin, wherein the processor is separate from the first and second processors and the at least one additional processor.

12. (Currently amended) The method of claim 7, further comprising ~~the step of~~: connecting from the first processor to the first port and from the second processor to the second port.

13. (Currently amended) The method of claim 12, wherein said ~~step of~~ connecting further comprises ~~the step of~~:

connecting from the first processor to the first port and from the second processor to the second port using a transmission control protocol.

14. (Currently amended) The method of claim 7, wherein said ~~step of~~ allocating further comprises ~~the step of~~:

defining each of the first and second ports using a transmission protocol.

15. (Currently amended) The method of claim 14, wherein said ~~step of~~ defining further comprises:

defining the transmission protocol as a User Datagram Protocol (UDP).

16. (Currently amended) The method of claim 7 1, further comprising ~~the step of~~:
determining, at the second processor, that a hairpin ~~the one or more firewalls selectively~~
~~restrict communication~~ between the first and second processors is required for communicating
with the first processor.

17. (Currently amended) The method of claim 16 ~~7~~, wherein ~~said step of determining~~ further comprises the step of: ~~determining, at the at least one additional processor, the first processor determines~~ that the one or more firewalls selectively restrict communication between the first and second processors based on information provided by the at least one additional processor ~~first and second processors~~.

18. (Currently amended) The method of claim 16 ~~7~~, wherein ~~said step of determining~~ further comprises the step of: ~~determining, at the at least one additional processor, the second processor determines~~ that the one or more firewalls selectively restrict communication between the first and second processors based on information ~~determined~~ provided by the at least one additional processor.

19. (Currently amended) The method of claim 7, wherein ~~said step of forwarding~~ further comprises:

forwarding, at the hairpin, one or more packets received at the first port from the first processor to the second port.

20. (Currently amended) A system for enabling communication between a first processor and a second processor using at least one additional processor separate from the first processor and the second processor, wherein one or more firewalls selectively restrict the communication, the system comprising:

means for determining, at the first or second processor, that the one or more firewalls restrict the communication between the first and second processors;

means for determining, at the at least one additional processor, whether the first and second processors mutually consent to enabling a hairpin between the first and second processors;

means for providing to the first processor a first information identifying the hairpin and to the second processor a second information identifying the hairpin, when the at least one additional processor determines that the first and second processors mutually consent to the hairpin;

means for establishing a first information flow from the first processor to the hairpin based on the provided first information;

means for establishing a second information flow from the second processor to the hairpin based on the provided second information; and

means for forwarding, at the hairpin, the first information flow received from the first processor to the second processor such that the communication between the first and second processors is allowed by the one or more firewalls.

21. (Currently amended) A system for enabling communication between a first processor and a second processor using at least one additional processor separate from the first processor and the second processor, wherein one or more firewalls selectively restrict the communication, the system comprising:

at least one memory comprising

code that determines, at the first or second processor, that the one or more firewalls restrict the communication between the first processor and the second processor;

code that determines, at the least one additional processor, whether the first and second processors mutually consent to enabling a hairpin between the first and second processors,

code that provides to the first processor a first information identifying the hairpin and to the second processor a second information identifying the hairpin, when the at least one additional processor determines that the first and second processors mutually consent to the hairpin,

code that establishes a first information flow from the first processor to the hairpin based on the provided first information,

code that establishes a second information flow from the second processor to the hairpin based on the provided second information, and

code that forwards, at the hairpin, the first information flow received from the first processor to the second processor such that the communication between the first and second processors is allowed by the one or more firewalls; and

at least one processor that executes said code.

22. (Currently amended) A computer program product for enabling communication between a first processor and a second processor using at least one additional processor separate from the first processor and the second processor, wherein one or more firewalls selectively restrict the communication, the computer program product comprising code that, said code comprising:

code that determines, at the first or second processor, that the one or more firewalls restrict the communication between the first processor and the second processor;

code that determines, at the least one additional processor, whether the first and second processors mutually consent to enabling a hairpin between the first and second processors;

code that provides to the first processor a first information identifying the hairpin and to the second processor a second information identifying the hairpin, when the at least one additional processor determines that the first and second processors mutually consent to the hairpin;

code that establishes a first information flow from the first processor to the hairpin based on the provided first information;

code that establishes a second information flow from the second processor to the hairpin based on the provided second information;

code that forwards, at the hairpin, the first information flow received from the first processor to the second processor such that the communication between the first and second processors is allowed by the one or more firewalls.

23. (Currently amended) A virtual network comprising:

a first processor;

a second processor; and

at least one additional processor, separate from the first processor and the second processor, that enables communication between the first processor and the second processor, wherein one or more firewalls selectively may restrict the communication and the first and second processors detect the restriction, the at least one additional processor further comprising:

means for determining whether the first and second processors mutually consent to enabling a hairpin between the first and second processors,

means for providing to the first processor a first information identifying the hairpin and to the second processor a second information identifying the hairpin, when the at least one additional processor determines that the first and second processors mutually consent to the hairpin,

means for establishing a first information flow from the first processor to the hairpin based on the provided first information,

means for establishing a second information flow from the second processor to the hairpin based on the provided second information, and

means for forwarding, at the hairpin, the first information flow received from the first processor to the second processor such that the communication between the first and second processors is allowed by the one or more firewalls.

24. (New) The method of claim 1, wherein determining, at the first processor, that a hairpin is required further comprises:

determining, at the first processor, that the one or more firewalls restricts communication between the first and second processors.

25. (New) The method of claim 24, wherein determining, at the first processor, that the one or more firewalls restricts communication further comprises:

examining configuration information associated with the second processor.

26. (New) The method of claim 24, wherein determining, at the first processor, that the one or more firewalls restricts communication further comprises:

performing a network autodiscovery process.

27. (New) The method of claim 1, further comprising:

enabling, by the at least one additional processor, the hairpin at a third processor separate from the at least one additional processor.

28. (New) The method of claim 1, wherein determining, at the at least one additional processor, whether the first and second processors mutually consent to enabling the hairpin further comprises:

determining whether the first and second processors mutually consent to enabling the hairpin based on information identifying the first and second processors.

29. (New) A method for enabling communication between an originating processor and a destination processor using at least one additional processor separate from the originating processor and the destination processor, the method comprising:

determining, at the originating processor, that communication to the destination processor is restricted by one or more firewalls;

determining, at the least one additional processor, whether the originating and destination processors mutually consent to enabling a hairpin between the originating and destination processors;

providing to the originating processor a first information identifying the hairpin and to the destination processor a second information identifying the hairpin, when the at least one additional processor determines that the originating and destination processors mutually consent to the hairpin;

establishing a first information flow from the originating processor to the hairpin based on the provided first information;

establishing a second information flow from the destination processor to the hairpin based on the provided second information; and

forwarding, at the hairpin, the first information flow received from the originating processor to the destination processor such that the communication between the originating and destination processors is allowed by the one or more firewalls.

30. (New) The method of claim 29, wherein determining, at the least one additional processor, whether the originating and destination processors mutually consent to enabling a hairpin further comprises:

determining whether the originating and destination processors mutually consent based on information stored in a database.